Exploration Examination Report
August 28, 1978

Todilto Exploration and Development Corporation
Navajo Allotted Uranium Mining Lease
NOO-C-14-20-5681
Section 13, Township 13 North, Range 11 West, NMPM
McKinley County, New Mexico

U. S. Geological Survey
Conservation Division
Area Mining Supervisor
Southern Rocky Mountain Area
P. O. Box 26124
Albuquerque, New Mexico 87125

Dale C. Jones
Mining Engineer
August 30, 1978

August 28, 1978, the writer inspected Todilto Exploration and Development Corporation's (TEDCO) Navajo Allotted Uranium Lease N00-C-14-20-5681 in the company of Tom Schack, Geologist for TEDCO. The purpose of the inspection was the examination of the exploration drilling operations being conducted within the leasehold on the north side of Haystack Mountain.

Exploration drilling operations within the subject leasehold were previously inspected by the writer July 20, 1978. At that time it was learned that some boreholes were being drilled with a foam circulation medium and that this foam was being discharged onto the land surface instead of being contained in earthen pits at the boreholes. Several shallow holes (125 to 150 feet) so drilled in 1976 were examined, and there was very little or no evidence of the foam discharges. Evidently, the foam medium breaks down and disintegrates much faster than the drilling mud used in deeper holes, and, in fact, manufacturers' information rate most, if not all, of these foam mediums as easily biodegradable.

As a result of the July observations, the Area Mining Supervisor granted TEDCO special permission to discharge the foam medium at shallow boreholes; however, the acceptability of such discharges at deeper boreholes was not established due to the amount of fluid medium involved. TEDCO was instructed to notify the USGS when deeper drilling commenced so that the effects of such discharges could be examined and evaluated as soon as possible. August 24, 1978, TEDCO so notified the writer, and this inspection was therefore conducted.

Under the approved exploration plan, TEDCO intends to drill a total of fourteen boreholes in the eastern part of the leasehold on an access road up the steeply sloping north side of Haystack Mountain. Five of these holes ranging in depth from 450 to 600 feet will be drilled during this phase of the exploration program as will four more shallow holes (400 to 425 feet) near the base of the mountain. It was anticipated that all of these boreholes would be drilled using a foam circulation medium.

At the time of this inspection, the drilling of borehole I-88 to an estimated total depth of 600 feet was in progress. Approximately 440 feet of the hole had been drilled with foam, but inadequate air pressure at that depth was delaying completion of the hole. The foam medium had been discharged at the hole collar and directed to run down the side of

Haystack Mountain in a small drainage (gulley) that trends approximately northwest. The foam tails had flowed down this drainage for quite some distance but were barely visible due to their small size and to the boulders and vegetation in and along the affected gulley. The writer estimates that all evidence of the discharge will have disappeared within 6 to 12 months depending on the amount of precipitation occurring in the area. Since the writer could not foresee any significant adverse environmental effects from the foam discharge, Mr. Schack was given permission to continue the foam discharges at all of the boreholes to be drilled.

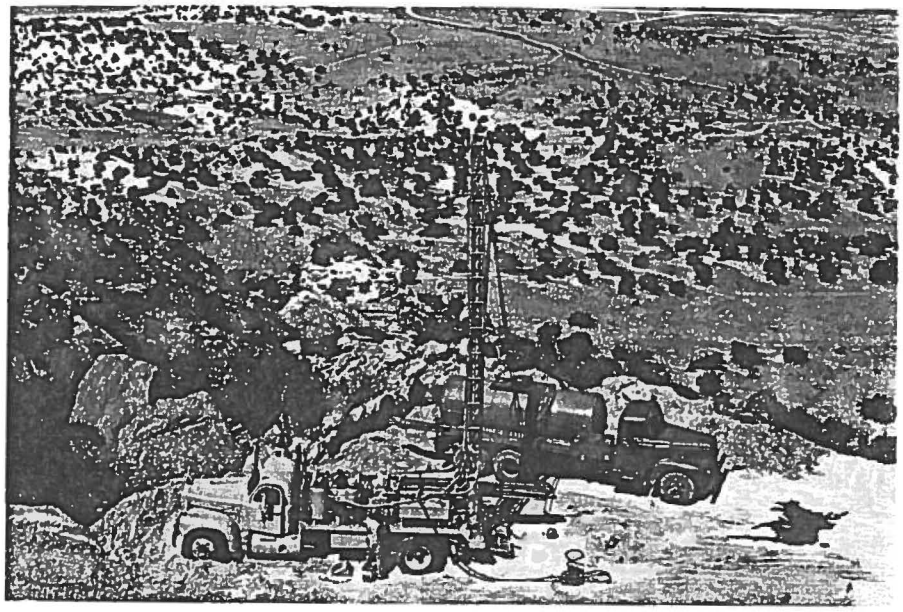
Later during the inspection, it was learned that the drilling personnel intended to complete I-88 and all the other boreholes with drilling mud and that the drilling mud would be discharged in the same manner as the foam. The writer informed Mr. Schack that this could not be allowed and that pits must be used to contain any drilling mud used. Mr. Schack assured the writer that such pits would be utilized, and a bulldozer was dispatched to borehole I-88 to construct the necessary pits. The writer also informed Mr. Schack that all mud pits would have to be either pumped and backfilled immediately or fenced until they could be backfilled without spillage of their contents.

Following the examination of borehole I-88, the writer also examined boreholes I-67 and -70. These boreholes, located at lower elevations near the base of Haystack Mountain, had depths of about 380-400 feet and were completed in 1976 using foam. Here too, there was little or no evidence of the foam discharges.

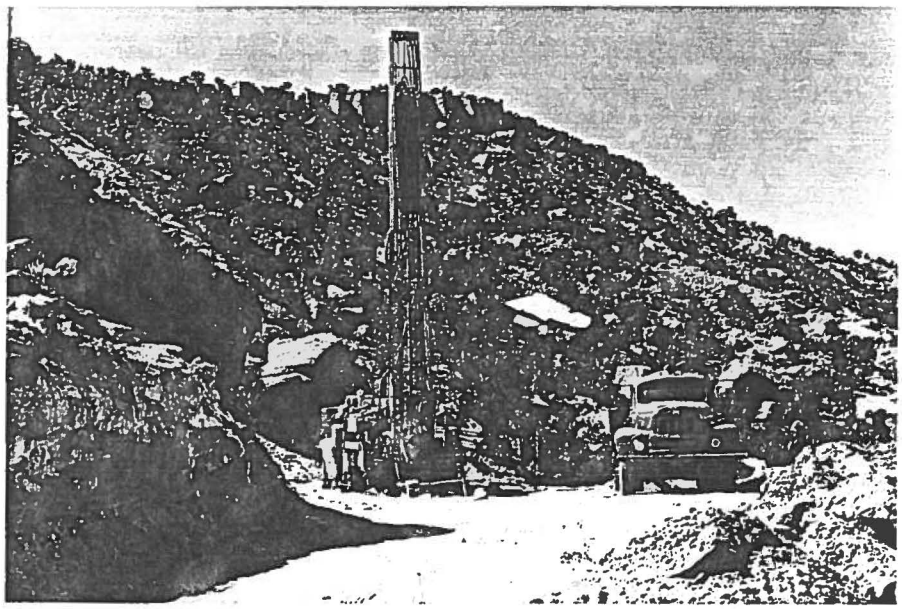
No violations of lease terms or exploration plan requirements were observed during the inspection.

Dale C. Jones
Mining Engineer

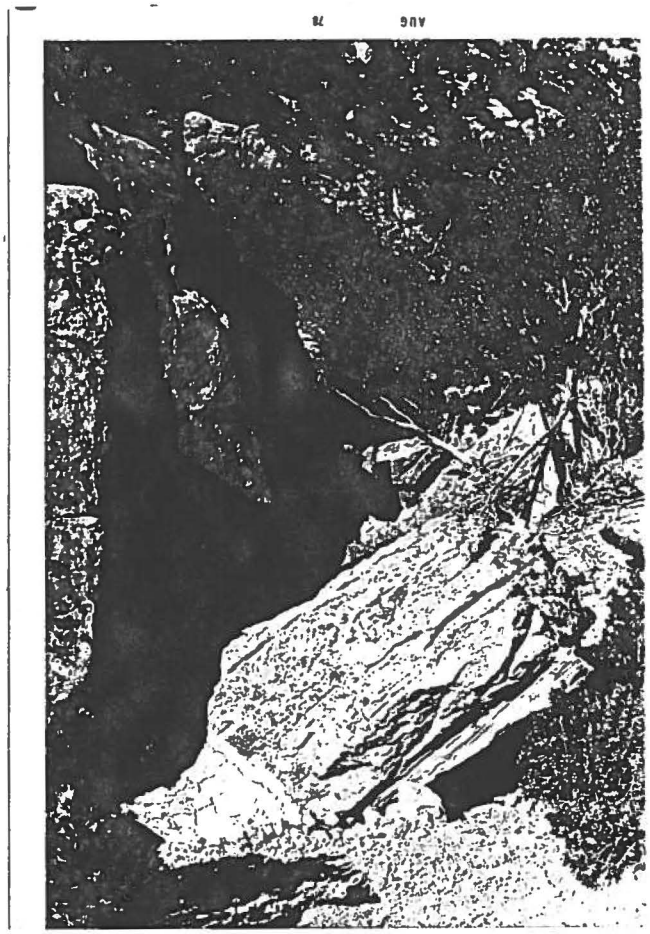
Original to: Area Director, Navajo Area Office, BIA
cc: Superintendent, Eastern Navajo Agency, BIA
Chief, BOMO, USGS
Through: Conservation Manager, CR, USGS
File (5681)



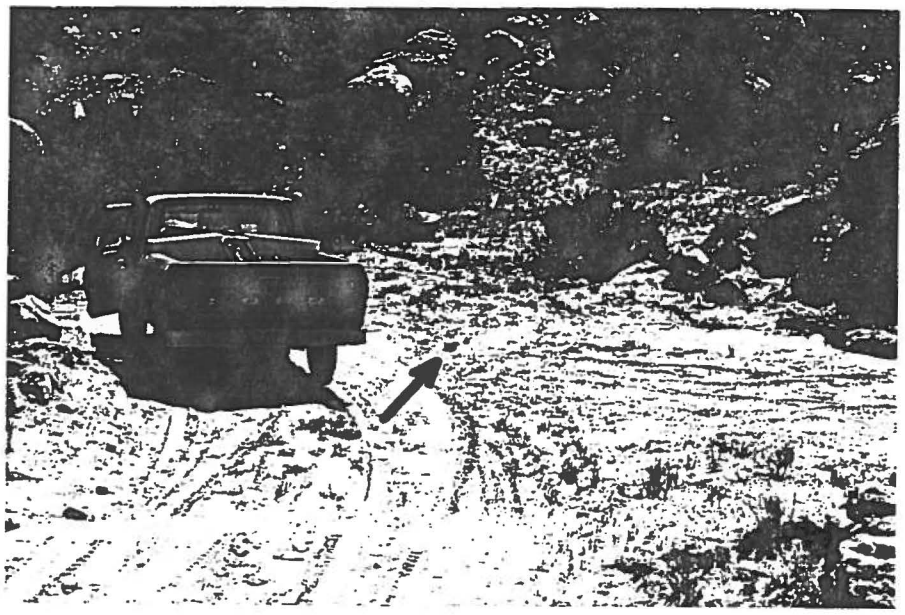
Drilling rig and water truck at borehole I-88 on the north side of Haystack Mountain; drilling rig is a Gardner-Denver type similar to a Failing 1000; residence of Mary Delgarito visible in background (upper right corner of photo).



Drilling rig and water truck at borehole I-88; northwest side of Haystack Mountain visible in background.

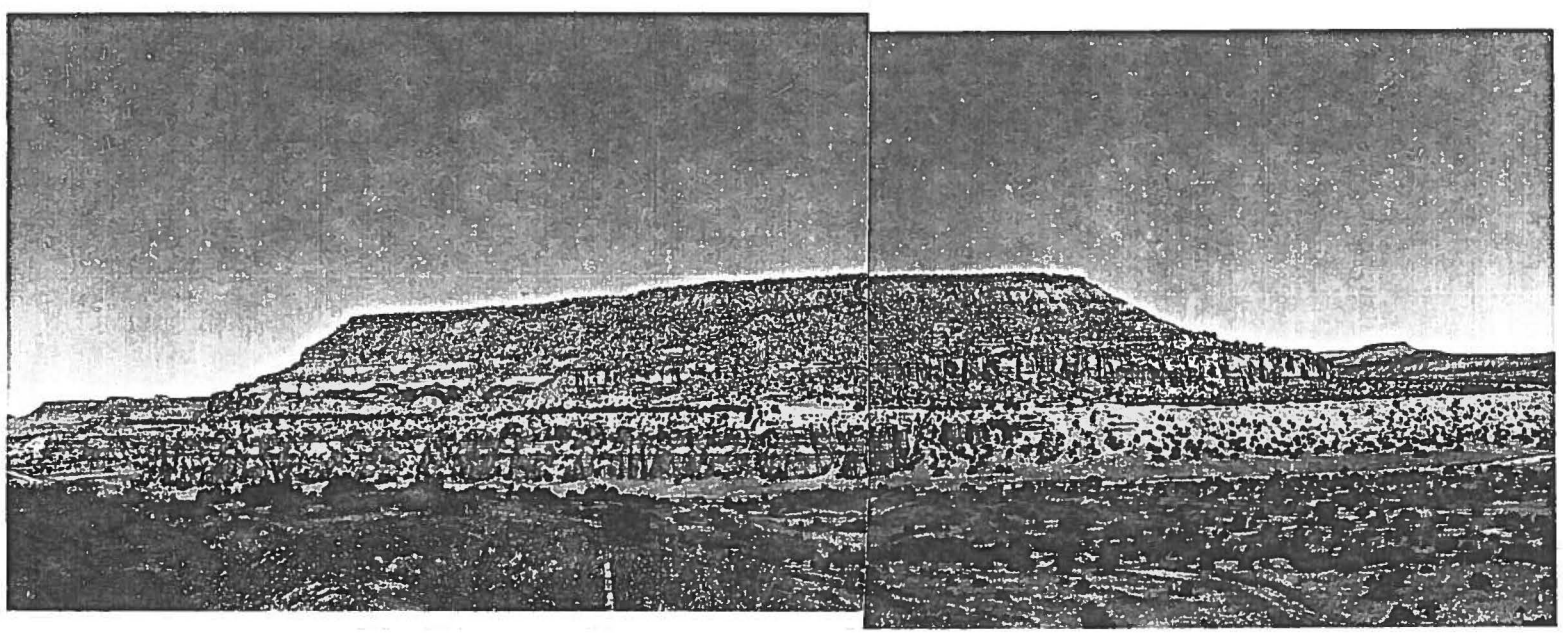


Discharge of foam drilling medium
from borehole I-88.



Borehole I-67 in eastern part of lease 5681 at base of Haystack Mountain; arrow indicates temporary wood plug in borehole; borehole was drilled in 1976 (TD approx. 380 feet), using a foam drilling medium which was discharged on the surface at the collar.

Access road to borehole I-68 at the base of Haystack Mountain in the eastern part of lease 5681.



South side of Haystack Mountain as
seen from El Tintero cinder cone.